

**REVISED STRATEGIC PLAN FOR THE
ELIMINATION OF
TUBERCULOSIS IN NEW JERSEY
2000**

**PREPARED BY:
THE TUBERCULOSIS ADVISORY STEERING COMMITTEE OF
THE NEW JERSEY THORACIC SOCIETY**

November 2000

PREFACE

In June 1990, then State Commissioner of Health, Dr. Frances J. Dunston, requested the American Lung Association of New Jersey to convene a Tuberculosis Advisory Committee to assist the State Health Department in problem solving and planning more effective TB prevention and control efforts. The Committee developed and published the "Strategic Plan for the Elimination of Tuberculosis in New Jersey" in 1992. The plan was both comprehensive and broad and included the necessary components to control and eliminate tuberculosis, without consideration to priorities or funding.

Since the publication and implementation of this strategic plan, there has been a 42 percent reduction in active tuberculosis morbidity in New Jersey (active TB cases: 1992 - 984; 1999 - 571). Despite these reductions, tuberculosis continues to be a significant public health problem in New Jersey. Active TB cases continue to occur among children, those with concurrent HIV/TB infection, immigrants and refugees who choose to settle in New Jersey and those with substance abuse problems. It is imperative that state and local TB control programs continue those activities which have had an impact on the reduction: early identification and treatment of TB infection and TB disease; Directly Observed Therapy (DOT) for TB cases and suspects and selected individuals with latent TB infection; case management; and; identification and examination of close contacts to active pulmonary and/or laryngeal TB cases; and completion of therapy, as prescribed, for both TB disease and latent TB infection.

The Committee recognizes the impact that the world-wide tuberculosis epidemic has on national and New Jersey morbidity cases and case rates. It recommends that the New Jersey Department of Health and Senior Services (NJDHSS) collaborate with the International Center for Public Health which includes the UMDNJ/New Jersey Medical School National TB Center, the Department of Microbiology and Molecular Genetics and the Public Health Research Institute in its global tuberculosis control and prevention activities.

In late 1999, the NJDHSS requested the New Jersey Thoracic Society to re-convene a Tuberculosis Advisory Steering Committee to revise and/or update the strategic plan, so that the Department could continue to implement its TB prevention, control and elimination efforts in a priority manner.

In mid-2000, the Institute of Medicine report, *Ending Neglect: The Elimination of Tuberculosis in the United States*, was published. This report indicated that "aggressive and decisive actions beyond what is now in effect would be required." The document included recommended actions which would be needed to ensure that the CDC/ACET goal of eliminating tuberculosis (one case per million population per year) is met. Those recommendations that are applicable to New Jersey have been included in this report.

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INTRODUCTION

The 1992 State TB Plan primarily focused on four prevention and control strategies: surveillance, disease prevention, disease containment and program assessment/evaluation. This revised plan updates these recommendations in light of the recently published Institute of Medicine (IOM) report concerning the elimination of tuberculosis in the United States, which was described in the Preface. In addition, the revised plan has been shaped by many of the joint statements of the American Thoracic Society (ATS) and the Centers for Disease Control and Prevention, the latest of which was "Targeted Tuberculin Testing and Treatment of Latent Tuberculosis Infection." These and other applicable publications, as well as pertinent TB Web Sites and links, are included in the Pertinent References section at the end of the plan.

The revised plan includes two new sections: Training and Education and Funding. The committee feels that adequate funding and the implementation of the plan will contribute greatly to the achievement of the objective for tuberculosis, which is included in Healthy New Jersey 2010, A Health Agenda for the First Decade of the New Millennium:

Reduce the incidence of tuberculosis to 2.4 cases per 100,000 population. For reference purposes, the active TB case rate for 1999 was 7.0 cases per 100,000 population.

It is the recommendation of the Steering Committee that the Strategic TB Plan be reviewed and revised, as necessary, on an annual basis. The document can be revised at any time, however, when recommendations change. Such changes shall be incorporated in a work plan developed by the Department.

SURVEILLANCE

The purposes of surveillance activities are to find TB cases, identify those with latent TB infection and/or exposed to infectious TB, guide them into the TB health care system in New Jersey, and maintain pertinent records to identify high risk groups and TB morbidity and mortality trends. This would include targeted screening, TB case/suspect reporting, reporting of positive laboratory results and the identification and examination of close contacts.

The identification and reporting of tuberculosis cases, suspected cases, and contacts is often slow or incomplete, thus delaying treatment and preventive interventions. Some cases are neither diagnosed nor reported, and, therefore, contact investigations are not done. In addition, many individuals receive Mantoux tuberculin skin tests (TST), and if positive, do not receive therapy for their latent TB infection. Other Mantoux TST screening activities yield very little or no latent TB infection.

By June 30, 2001, systems should be in place in New Jersey to assure that: 1) suspected or diagnosed cases are reported to the NJDHSS within three days of the time the diagnosis is made or suspected, or a positive laboratory result is obtained, so that contacts can be identified and examined on a timely basis; 2) active population-specific case finding, screening, and preventive intervention programs are established and maintained by local health departments; and 3) the outcomes of such services are measured and assessed.

METHOD 1

Active case finding and prevention should be included in all areas with high TB disease incidence and prevalence. It is recommended that TB screening be initiated and /or maintained in these areas. Initial screening should involve the use of the Mantoux method tuberculin skin test and, if significant, followed with a chest x-ray and treatment where appropriate. Periodic x-rays are not recommended in such screening programs

ACTIVITIES

1. The NJDHSS TB Program should identify high risk groups of people in the community among whom tuberculosis and transmission of infection are occurring. This requires data analysis (e.g., residence, occupation, socioeconomic status indicators, and HIV-antibody status) included on the individual case report form. These data are necessary to identify high-risk populations (e.g., homeless, HIV positive patients in infectious disease clinics, and individuals attending STD clinics, HIV counseling and testing sites, drug treatment centers, community health centers

and those incarcerated in correctional facilities) and areas in which active case finding and preventive intervention programs should be conducted.

2. Members of high-risk groups and their health-care providers should be apprised of the problem and involved in the design, implementation, and evaluation of case-finding and prevention programs.
3. Screening programs should be conducted, at minimum, for those groups or population identified as either at high risk for TB infection (e.g., recent immigrants or refugees) foreign born) or at medical risk for the development of TB disease (e.g., those with HIV infection). However, testing should not be conducted for individuals or groups unless there are plans to initiate treatment for latent TB infection and resources are assigned to ensure that these individuals complete their prescribed therapy. ATS/CDC statements regarding such targeted screening and treatment should be followed.
4. Protocols and/or procedures for the referral and examination of identified reactors or others presenting symptoms of TB disease or with abnormal chest X-rays, should be maintained or revised, as necessary. This would include those patients from high risk groups or those attending health care facilities mentioned in section 1 above.
5. Therapy, as appropriate, should be initiated for those with latent TB infection, identified during the screening programs.
6. The results of tuberculin skin testing programs, including the treatment of those individuals with latent TB infection, should be reported by the testing agency to the TB Program on a semi-annual basis for evaluation.
7. All State regulations (standards) and guidelines pertaining to the screening of clients and/or employees should be evaluated by the Department's TB Program to determine their effectiveness and appropriateness. Those that are neither effective nor appropriate should be rescinded. All remaining screening requirements should be standardized.

METHOD 2

Tuberculin skin testing programs should be conducted periodically among the staff of high-risk institutions or high risk areas in institutions in accordance with CDC/OSHA/PEOSH and NJDHSS licensing regulations.

ACTIVITIES

1. The Department should ensure that licensing standards, rules, regulations and protocols for hospitals, homeless shelters, AIDS/HIV treatment centers, nursing homes, substance abuse treatment centers, dialysis units, correctional facilities (including pre- and post-incarceration agencies), home health care agencies , and chest clinics are initiated, revised and/or maintained so that staff of these hospitals and institutions are tested initially upon employment and annually thereafter. Such screening must meet, as applicable, federal OSHA or PEOSH requirements and NJDHSS licensure standards.
2. Information regarding the results of the testing programs and treatment outcomes should be forwarded by the testing agency to the Department's Tuberculosis Program, at minimum, every six months.
3. Annual and/or periodic testing will be continued in these facilities based on the results of the testing.

METHOD 3

Additional reporting systems for reportable infectious diseases, including tuberculosis should be initiated to ensure rapid case reporting and make it easier for health-care providers to report.

ACTIVITIES

1. Local tuberculosis control program staff should establish and/or maintain contacts in each high incidence area hospitals, institutions (i.e., homeless shelters and correctional facilities) and hospital laboratories to facilitate prompt reporting of TB cases and suspects. The NJDHSS TB Program should be maintaining contacts with commercial laboratories and state correctional facilities.
2. Information regarding initial and current status reporting requirements should be disseminated to physicians, infection control professionals, laboratory directors and other health care providers on a periodic basis.
3. Regional computer-to-computer link-ups should be explored once the central office registry database is functional, staff are confident in its utility, and resources are available. This could be accomplished through the use of laptop computers for data entry and/or the use of existing hardware. Downloaded data should be mailed or sent via courier and/or transmitted electronically to the Department's TB Program on a periodic basis. Such link-ups should be incremental with implementation first in the high TB incidence areas.

4. The NJDHSS should maintain or develop a database to track and monitor the occurrence of primary and/or acquired drug resistant TB, particularly multi-drug resistant TB (resistant to at least isoniazid and rifampin).

METHOD 4

The time spans between the diagnosis of tuberculosis, initiation of therapy and the date the case/suspect is reported should continue to be shortened and monitored on an on-going basis.

ACTIVITIES

1. Monitoring of time spans should be conducted by the State and/or local health department/TB control agency staff. Delays of more than three (3) working days from the time of diagnosis should be investigated and action taken to prevent similar delays in the future. NOTE: date of diagnosis is defined as the day anti-tuberculosis medications were prescribed; or, if in the absence of medications being prescribed, the date M.tuberculosis was reported to the diagnosing physician. Reporting could include one or more of the following activities: telephone calls, letters, e-mail, FAX and/or personal visits to the physician or infection control professional.
2. If all of the above actions fail repeatedly, the delinquency in reporting should be referred to the Department for follow-up, including appropriate legal action and/or reporting to the appropriate licensing board, if necessary.

METHOD 5

The Department's TB Program should validate and assess existing surveillance systems to detect any failures to report cases.

ACTIVITIES

1. The TB Program should conduct periodic reviews of selected existing record systems (e.g., laboratory reports and death certificates) to detect any failures, including non-reporting and reporting delays in case and suspect reporting.
2. The Department should continue to match the TB and HARS (AIDS and HIV infection) registries, at a minimum, on a quarterly basis.
3. Local health departments, home health agencies, or other agencies which service patients with TB should monitor and/or report such system failures to the Department's TB Program.
4. Procedures should be monitored in pharmacies and other settings where anti-tuberculosis medications are dispensed or administered to ensure that TB is reported in a timely manner. Wide scale educational programs should be conducted

to reach such settings as clinics conducted in hotels for senior citizens and the homeless; neighborhood health care centers for children and adults; and other clinic/social service programs where large numbers of adults and children are serviced.

5. The NJDHSS should consider the promulgation of a regulation requiring pharmacies to report the dispensing of TB medications for TB disease and/or latent TB infection.

METHOD 6

The NJDHSS “Standards of Practice for Conducting TB Case/Suspect Interviews and Contact Investigations” should be followed. Thus, the identification and medical examination of close contacts should be completed within 45 days after the diagnosed/suspected case was brought to the attention of the interviewing agency.

ACTIVITIES

1. The identification of close contacts to individuals with active pulmonary or laryngeal TB should be completed within 15 days after the individual has been brought to the attention of the interviewing agency.
2. The initial examination of close contacts should be completed within 30 days of their identification.

DISEASE PREVENTION

Preventable tuberculosis cases continue to occur in New Jersey. By definition, preventable cases include all those for whom one or more of the currently recommended interventions should have been utilized, but were not. These interventions include contact identification and examination, therapy for latent TB infection, prompt diagnosis of disease, prompt reporting, isolation of persons with suspected and diagnosed tuberculosis, adequate ventilation of buildings, chemotherapy for disease, and directly observed therapy. Some of these interventions (e.g., isolation) are designed to prevent transmission of infection among residents and staff of high-risk institutions such as hospitals, nursing homes, correctional institutions, and shelters for the homeless. Other interventions (e.g., treatment for latent TB infection) are designed to prevent disease among those already infected. Such therapy reduces the lifetime risk of tuberculosis by more than 90% among persons who complete a full course of treatment.

To prevent infection among persons potentially exposed to an infectious case of tuberculosis and to prevent tuberculosis among contacts and other infected persons for whom therapy is recommended, the following methods should be conducted.

METHOD 1

Existing and/or needed guidelines and protocols establishing standards of practice for the control and prevention of tuberculosis should be updated or developed for distribution to chest clinics and other providers in New Jersey.

ACTIVITIES

1. The guidelines and protocols should be developed by the Department's Tuberculosis Program staff with input from the National TB Center.
2. In the interim:
 - a. All individuals with diagnosed or suspected tuberculosis should be evaluated, treated and managed, in accordance with CDC/ATS recommendations and guidelines and Departmental regulations for the confinement of tuberculosis patients (N.J.A.C. 8:57-5). Contact interviewing should be initiated by a person having specific training in tuberculosis control within *three (3) days* of the local health department receiving the suspect/case report.
 - b. Close contacts, especially those at high risk of developing TB disease (i.e., those with HIV infection, children under four years of age, those with latent TB

infection and others) whose skin test shows no evidence of latent TB should be prescribed appropriate treatment regardless of age. Treatment should continue until repeat testing (usually 3 months after last exposure to individuals with active TB) confirms the absence of latent TB infection. Infected contacts and those with HIV infection (regardless of the Mantoux tuberculin skin test result) should continue and complete a recommended course of treatment. Individuals exposed to persons with multi-drug resistant TB (isoniazid and rifampin) should be treated according to the latest recommendations of the Department's Tuberculosis Program and the National TB Center, based on CDC/ATS recommendations.

- c. All persons identified with HIV infection should be tuberculin skin tested in accordance with the frequency of testing recommended by the American Thoracic Society/CDC and the Department's Division of AIDS Prevention and Control. Those with positive tuberculin reactions (5 mm or larger) or a documented history of a past positive reaction, and all other recognized high-risk, infected persons, should be considered for treatment of their latent TB infection regardless of age. This includes recently infected persons, (i.e., persons who had negative skin-test results who have converted to positive test results), persons with chest radiographic findings consistent with past tuberculosis, and those with medical risk factors known to substantially increase the risk of tuberculosis (i.e., silicosis, below ideal body weight, gastrectomy, immunosuppressive therapy). Those with negative skin tests, but presenting with symptoms compatible with TB disease, should be referred for a chest X-ray and further medical examinations.
- d. Patients on isoniazid and/or multi-drug therapy for their latent TB infection must be carefully monitored on a monthly basis for treatment adherence and signs and symptoms of drug toxicity. If signs or symptoms of drug toxicity appear, therapy should be stopped immediately and the patient re-evaluated. No more than a one month supply of medicine should be dispensed at any visit. Persons placed on therapy for latent TB infection should complete a full course of treatment.

Directly observed therapy for latent TB infection should be considered whenever necessary to ensure adherence. If necessary, twice weekly directly observed LTBI therapy may be utilized to avoid overextending personnel resources.

- e. The National TB Center should be contacted for consultation regarding treatment for latent TB infection when a contact has been exposed to multiple drug resistant TB disease.
- f. Current protocols and procedures for contact identification in congregate settings (e.g., schools, correctional facilities, workplace and institutions) should be followed.

METHOD 2

Adequate respiratory facilities and appropriate infection control precautions should be present in hospitals and other facilities that admit active tuberculosis patients or patients with symptoms suggestive of tuberculosis in accordance with ATS/CDC/PEOSH/OSHA guidelines.

ACTIVITIES

1. Licensing standards for hospitals should include requirements for respiratory isolation patient rooms and the areas where aerosol generating procedures are done.
2. Infection control recommendations from the Centers for Disease Control and Prevention, which indicate that airborne precautions, as well as standard precautions, should be followed in hospitals and other settings where infectious or suspected infection patients are seen, as applicable.
3. The Department, the New Jersey Association for Professionals in Infection Control and Epidemiology, Inc. and other interested agencies, should develop and disseminate, through meetings and pamphlets, guidelines for preventing the transmission of tuberculosis in health care settings.
4. The Department's Division of Health Care Systems Analysis should ensure that such standards and guidelines are being implemented and followed. This would include ensuring that adequate respiratory control procedures and practices are in place to prevent the occurrence and spread of multiple drug resistant tuberculosis.

METHOD 3

Minimum standards for infection control should be met or exceeded in facilities or areas where suspected or confirmed infectious TB cases are admitted or seen.

ACTIVITIES

1. Agencies/facilities should follow CDC guidelines and meet OSHA/PEOSH requirements and NJDHSS standards.
2. Chest clinics should apply the latest policies and procedures for administrative controls, engineering controls and respiratory protection programs.

METHOD 4

Special programs/activities should be conducted/maintained for certain segments of the population who are at high risk of developing and spreading tuberculosis.

ACTIVITIES

1. Consideration should be given to routinely obtaining sputum for mycobacterial smear and culture from symptomatic nursing home residents and inmates in correctional facilities thought to have a lower respiratory infection.
2. Infected refugees, immigrants, and entrants from high- incidence countries should be started on therapy for documented latent TB infection within one month after their entry into the United States or, if disease is present, continue all therapy started prior to their entry until completion.
3. Children of active TB cases should be considered the highest priority for prevention. Guidelines (ATS, CDC) for child contacts should be followed without exception. Education of parents and other caretakers should be initiated and follow-up should be diligent (home visits, telephone calls, letters, etc.).
4. Colleges and universities with a large group of students from countries with high TB case incidence rates, should be encouraged to tuberculin skin test students, *regardless of their BCG status*. The appropriate medical person should initiate therapy for latent TB infection if disease is not present, and/or require incoming students to present evidence of prior documented positive TB skin tests. Those with TB disease should be treated in accordance with CDC/ATS guidelines.
5. All the special programs/activities should be evaluated periodically to determine their value as a prevention intervention.

DISEASE CONTAINMENT

Many tuberculosis patients in New Jersey do not complete a recommended course of therapy as recommended by CDC/ATS guidelines. For cases reported in 1997 (latest published data), approximately 71% of those for whom therapy was indicated for less than 12 months, completed their therapy within one year. This is far below the national standard of 90%; thus much still needs to be done. (Note: approximately 89% completed their therapy at any time).

The containment of tuberculosis disease is fundamental to the success of any tuberculosis control program. The need to ensure that individuals with infectious TB are rendered non-infectious as soon as possible, as well as the adequate therapy for latent TB infection, is essential to stopping the spread of infection as well as disease. Completing appropriate therapy is the key to ensuring success in meeting this objective. Continued active TB morbidity, concern for drug resistance (especially in the larger cities) as well as the potential reservoir of new cases among the HIV infected population, reinforce the absolute necessity of ensuring treatment adherence. In addition, periodic monitoring of the sputum status of patients is vital to accurately evaluate treatment success or failure. Given the above situation, the following methods must be initiated and/or maintained throughout New Jersey to control the spread of this disease.

METHOD 1

A specific treatment and monitoring plan should be developed for each new infectious case, based on individual patient characteristics.

ACTIVITIES

1. Standards of practice for medical care, treatment and control of TB should be developed by the NJDHSS TB Program and the National TB Center and implemented statewide.
2. Upon notification of a diagnosed or suspected tuberculosis case, a treatment and monitoring plan should be developed by the diagnosing/treating physician, including drugs to be used (doses, duration, and frequency of administration), assessment of toxicity, and methods to be used to assess and ensure adherence. Standardized forms should be developed for this purpose.
3. Patients under private physician care should be allowed to get free medication at a State-approved chest clinic, provided that appropriate sputum and other examinations are collected in the clinic. The results of drug toxicity tests, patient

adherence assessment, and laboratory examinations should be sent to the treating private physician.

4. Procedures should be in place within each clinic to ensure that the results of all drug susceptibility studies are monitored and promptly addressed. Information about those with drug resistant tuberculosis should be brought to the attention of the treating physician within two (2) working days and follow-up initiated within five (5) working days to ensure that appropriate medications are being prescribed.
5. The occurrence of diagnosed or suspected multi-drug resistant TB should be monitored by the Department's Tuberculosis Program. Once MDR-TB is identified, the TB Program should notify the treating physician that the records of these patients will be referred to the New Jersey Medical School National Tuberculosis Center, the Department's medical consultant, for review, evaluation and consultation. Confidentiality of the transferred records must be maintained. The National TB Center should notify the physician about their recommendations and send a written copy to the Department. Appropriate records of the consultation referral and recommendations should be maintained. Follow-up regarding any changed medication regimen should be conducted by the local chest clinic and monitored by the Department's TB Program.

METHOD 2

All patients with tuberculosis should complete treatment with an appropriate ATS/CDC recommended regimen.

ACTIVITIES

1. For each newly diagnosed case, suspect, or reactivated case of tuberculosis, a trained case manager should be assigned the responsibility and held accountable for ensuring patient adherence to the prescribed TB treatment, including continuity of directly observed therapy, and where appropriate, ensuring identified contacts are examined.

A health-care worker should visit the patient within three days of receiving the case/suspect report to conduct the TB interview, to educate the patient, identify contacts where appropriate, and identify problems which may affect patient adherence.

Problem resolution should occur at this time. A behavioral contract, whether written or verbal, may assist by stipulating responsibilities of both the patient and provider.

2. All infectious patients should be immediately placed on directly observed therapy (DOT). Each patient must be assessed for biophysical/psychosocial problems which may be barriers to adherence (e.g., substance abuse and/or homelessness). Current State regulations (N.J.A.C. 8:57-5) mandate at least the initial ten doses of DOT be given on an outpatient basis. If the patient either indicates and/or demonstrates an unwillingness to adhere to his/her prescribed treatment, DOT should be continued until therapy is completed. Other absolute indicators for mandating patients on DOT for the duration of their therapy, include:
 - a. Court-ordered DOT
 - b. Multiple-drug resistant TB cases
 - c. Previous treatment failures
 - d. Patients receiving intermittent therapy (two or three times weekly).

A regulation should be promulgated mandating completion of therapy for all patients with active TB disease.

The NJDHSS should consider revising the existing regulations to extend the induction phase of DOT from 10 days to the first two months on an ambulatory basis.

3. Local chest clinic and/or TB control staff should follow-up all private physician patients on a monthly basis to ensure that these cases are also under proper supervision. If not, a field referral to an outreach worker should be generated, and the patient located and brought back to appropriate treatment.
4. The chest clinic and/or TB control program health-care worker must also take all actions deemed appropriate to ensure adherence by persons placed on therapy for latent TB infection. This is essential to reduce/eliminate the potential for new cases in the future. This would include the education of these patients to reinforce the need to take the medication as prescribed as well as removing any barriers to adherence. Alternative methods such as utilizing school nurses, occupational health nurses, or other health care employees in the work/school setting for directly observed therapy for latent TB infection should be encouraged.

METHOD 3

The use of incentives and enablers should be used to improve patient adherence with their prescribed medications at sites where people seek tuberculosis diagnostic, treatment and preventive services (i.e., chest clinics, HIV/AIDS counseling and testing sites, drug treatment centers, etc.).

ACTIVITIES

1. Incentives are small rewards offered to patients to encourage adherence to the prescribed TB regimen. Incentives must be tailored to the individual patient or cohort of patients. Examples of incentives include food certificates, telephone cards, supplemental dietary drinks, movie passes, etc. Incentives should be given in a non-judgmental manner.
2. Enablers are items made available to the patient to get to the clinic and/or DOT treatment site. Such aid could be made either directly by staff or through a transportation voucher system.

METHOD 4

All necessary TB services should be acceptable, available and accessible.

ACTIVITIES

1. All necessary services including the provision of anti-tuberculosis drugs, x-rays, skin testing material, laboratory services (including blood work), nursing interventions and physician consultation must be made available without regard to the patient's ability to pay and in a patient-friendly atmosphere. This would include ancillary services for persons who are homeless, drug addicts, HIV positive, etc.
2. Each local health department offering clinical services for tuberculosis care must be able to provide the full range of necessary services including the ability to collect sputum specimens periodically, according to standards. This is essential in order to document sputum conversion to negative (or lack thereof) as a measure of the patient's response to therapy. If sputum conversion is not confirmed, the containment of the disease cannot be assured. Private physicians must send their patients to a local chest clinic for sputum collection as a requirement for their patients to receive their prescribed TB medications free of charge.
3. Protocols and/or procedures for the referral, examination and treatment of tuberculosis cases and suspects should be implemented. This would include provisions for referrals from drug treatment centers, correctional facilities, HIV counseling and testing sites, HIV Early Intervention Program centers, and homeless shelters.
4. Consideration should be given to using advanced nurse practitioners to supplement physician time in chest clinics.

5. The delivery of tuberculosis diagnosis and treatment services outside the chest clinic should be governed by well-designed contracts that specify performance measures and responsibilities.

Both public and private health insurance programs should be billed for tuberculosis diagnostic and treatment services whenever possible but such services should never be denied due to a patient's inability to make a co-payment.

6. Local health departments, chest clinics and private MDs should refer patients who present medical management problems or adherence problems to the National TB Center for consultation and follow-up, if necessary. The TB Program may strongly recommend such a referral if it judges it necessary in a particular patient.

METHOD 5

High quality tuberculosis laboratory services should be provided.

ACTIVITIES

1. The NJDHSS should continue to improve the Department's TB laboratory services to reduce the time necessary to both identify TB in a specimen and provide antibiogram results.
2. All specimens identified as having *M.tb* or *M.tb complex* by licenced commercial or hospital laboratories should be sent to the Department's Mycobacteriology Laboratory for confirmation and drug susceptibility testing.
3. All initial isolates identified as *M.tb* or *M.tb complex* should have drug susceptibility testing done.
4. Hospitals which utilize commercial laboratories to process their TB specimens must provide the patient's name and address on the laboratory slips. Such information is required to be reported by the State Sanitary Code (N.J.A.C. 8:57-5) and should be reported by the commercial laboratories to the Department when a positive result is identified.

METHOD 6

Utilize legal measures when individuals either refuse to be examined and/or to adhere to their prescribed medication.

ACTIVITIES

1. The use of legal interventions, including confinement, in accordance with the provisions of N.J.A.C. 8:57-5, with due process, should be implemented if other mechanisms fail, when:
 - a. A person with clinically suspected active tuberculosis, close contact to either an active or clinically suspected active tuberculosis case, or person with TB infection and active TB has not been ruled out, has clearly expressed refusal to comply, or has failed to comply, with required diagnostic examinations.
 - b. A person with active or clinically suspected active tuberculosis has not complied with an order for DOT; or,
 - c. A person with active or clinically suspected active TB is unable or unwilling to comply with a prescribed treatment regimen and/or infection control requirements; or,
 - d. A person with infectious MDR-TB is unable or unwilling to comply with infection control requirements; or,
 - e. The Commissioner of Health and Senior Services, or his or her designee, has determined that the public, or the health of any other person, is endangered by an active or clinically suspected active case of TB.
2. The Department's TB Program will develop evaluation mechanisms to determine a health care provider's ability to successfully implement the confinement guidelines, identify problems associated with the process, and measure outcomes.

TRAINING AND EDUCATION

Training and education are major components for the prevention, control and elimination of tuberculosis. To address this nationally, tuberculosis experts collaborated in the development of the *Strategic Plan for Tuberculosis Training and Education*. It provides “a blueprint for building a strong, coordinated and effective system for TB training and education.” The plan should be tailored for New Jersey and used accordingly. This would include materials and activities for public and private-sector providers, patients and their families and the general public.

In New Jersey, organized TB training and education programs are provided by many different agencies, either categorically or included with other infectious diseases. This would include, but not be limited to, the New Jersey Department of Health and Senior Services, New Jersey Medical School National Tuberculosis Center (UMDNJ-Newark), American Lung Association of New Jersey, New Jersey Academy of Medicine, New Jersey Thoracic Society, New Jersey Hospital Association, correctional facilities. Educational materials tailored for education and training have been disseminated. This included pamphlets, handouts, CDC/ATS statements, posters, etc. provided by CDC, NJDHSS and ALANJ/NJMS, NJMS National TB Center.

METHOD 1

Health care providers, health departments, medical and nursing schools, schools of public health, volunteer agencies, professional societies, community based organizations and minority advocacy groups should be educated and/or updated about the signs and symptoms of tuberculosis and the methods of its diagnosis, treatment, and prevention.

ACTIVITIES

1. The New Jersey State Department of Health and Senior Services' (hereinafter referred to as the Department) Tuberculosis Program should take the lead in developing a pool of qualified instructors from the state and local health departments and the New Jersey Medical School's National Tuberculosis Center (hereinafter referred to as the National TB Center).
2. Ongoing training should be conducted for health department and TB control agency staff on a need basis.
3. Tuberculosis control subject matter should be included whenever training/education sessions regarding sexually transmitted diseases (STD), HIV infection/AIDS and substance abuse are conducted.

4. The Department's TB Program and the National TB Center should take the lead role in disseminating information about the signs/symptoms of TB and the methods of its diagnosis, treatment and prevention to health care providers. This can be accomplished by including such information in documents/literature already being printed and distributed by various agencies (e.g., public and private AIDS newsletters or mailings; hospital, medical and other professional journals, etc.) and posted on web sites (see #7 below). In addition, the Department should distribute relevant materials developed by the American Thoracic Society (ATS) and the Centers for Disease Control and Prevention (CDC) and other agencies, as applicable, to individuals in infection control, infectious disease, professional societies, health departments, chest clinics, etc.
5. The American Lung Association of New Jersey (ALANJ) should take the lead role in getting the message out to the larger community as a whole. This could be accomplished via public service announcements, TB-oriented flyers inserted in ALANJ mailings; provision of pamphlets oriented toward various high TB risk segments of the community (e.g., recent immigrants from high TB incidence countries, parents of students requiring tuberculin skin tests, drug users, HIV positive individuals). These pamphlets should be available at TB, infectious disease and Sexually Transmitted Disease Clinics ; HIV counseling and testing sites; drug treatment centers; private physician offices and any other site attended by individuals at high risk of tuberculosis disease or latent TB infection.

The availability of existing literature should be assessed. Pamphlets in various languages (e.g., English, Spanish, Vietnamese, Russian and Creole French) are needed, and should be purchased and/or produced, with an emphasis on TB prevention, the significance of a positive PPD, importance of the treatment of latent TB infection (LTBI), the need for medical evaluation, if symptomatic, and the importance of adhering to prescribed drug treatment regimens for TB disease and latent TB infection.

6. General information about tuberculosis will continue to be available to health care providers and the general public via the National TB Center's info line (1-800-4TBDOCS).
7. General information, data, protocols and procedures will be available on the Department's Web Sites with links to other agencies (i.e., CDC and the National TB Centers in Newark, Harlem and San Francisco).

PROGRAM ASSESSMENT AND EVALUATION

In many areas, there is incomplete assessment of community tuberculosis control prevalence programs and inadequate evaluation of community prevention and control efforts. As a result, programs do not function as effectively and efficiently as they should.

By June 30, 2001, a system should be in place to achieve an ongoing, effective assessment of local tuberculosis control and prevention programs and evaluation of the activities being performed at all levels for the control and elimination of tuberculosis.

METHODS

The outcomes of tuberculosis control activities in the Department and local TB control programs should be evaluated on a periodic basis.

ACTIVITIES

1. CDC and the ALANJ should be asked to evaluate the Department's Tuberculosis Program every three years.
2. All tuberculosis control programs and chest clinics in New Jersey should be evaluated periodically using CDC and state TB Program standards, in priority order, based on their tuberculosis incidence and prevalence rates. The priority order will be determined by the Department. These evaluations should include an analysis of morbidity and mortality data, case reporting, case finding, clinical services, treatment and prevention activities. These evaluations should be completed in collaboration with staff from the NJ Medical School National TB Center.
3. The Department should develop and publish an annual tuberculosis summary and program plan (including objectives, methods, a discussion of specific program progress or failure, and corrective action needed) for the State.
4. Priority for continued state funding of local programs should be, at least in part, contingent upon responsiveness to TB program assessments, improved program performance, and productive activities in high-risk populations.
5. A computerized record system should be available to local programs for case reporting, patient management, and program assessment. Microcomputers, with appropriate software and training, should be used by the state and local health department tuberculosis control programs in high incidence areas.

6. Each new tuberculosis case and each death from tuberculosis should be reviewed to determine if the case or death could have been prevented had ATS/CDC recommendations been followed. Based on these reviews, new policies should be developed and implemented, if necessary, to reduce the number of preventable cases.
7. The activities and quality of the NJDHSS Microbacteriology Laboratory should be evaluated in light of declining TB morbidity. The impact of the fees for processing specimens should also be included in the evaluation.

FUNDING

In FY 2000/FY2001, the Tuberculosis Program received approximately \$ 2.7 million in state and approximately \$ 7 million in federal TB cooperative agreement funds to support the NJDHSS TB prevention, control and elimination strategies. State funds are used for TB Program staff, administrative and travel support, Health Service Grants to support clinic and outreach services at the local level and the purchase of medication and biologicals for distribution to the 36 NJDHSS-approved chest clinics and other screening sites. Other State funds for tuberculosis do not come directly to the TB Program. This would include TB screening, diagnostic and treatment costs in drug treatment centers, correctional facilities, public and private schools, HIV/AIDS diagnostic and treatment centers and the Department's Mycobacteriology Laboratory. Some inpatient services and/or limited outpatient costs are paid for Charity Care and the Hospital Relief funds, Medicaid, Medicare and third party payment mechanisms. This would also exclude costs borne by county and municipal health departments for TB-related activities. Federal funds are also used to support TB Central Office and field staff, TB health service grants, the New Jersey Medical School National Tuberculosis Center, the Department's Mycobacteriology Laboratory and research grants.

Funding decisions should be made on the burden of TB and cost effectiveness, rather than reductions in active TB morbidity. As active TB morbidity decreases, funding should be continued, at minimum, to maintain and expand, if necessary, targeted tuberculin testing and treatment of latent tuberculosis infection. This would include the provision of directly observed therapy of latent TB infection for certain patients.

METHOD

Funding from a variety of sources should be sought to maintain activities commensurate with the burden of tuberculosis in New Jersey.

ACTIVITIES

1. The NJDHSS should continue to fund TB control, prevention and elimination activities to implement activities which will have an impact on the reduction of tuberculosis, with an emphasis on the completion of case therapy and treatment of latent TB infection. This would include new treatment regimens which may be taken for shorter periods of time, enhance completion rates, but are more costly than the existing treatment regimens.
2. The NJDHSS, if eligible, should apply for any available federal funds to implement the activities listed in the IOM report.

3. The NJDHSS should initiate action to recover the cost of directly observed medication activities as included in the Medicaid Omnibus Bill of 1992. In addition, the NJDHSS should review and revise managed care regulations to facilitate the recovery of funds for the provision of clinical TB services by local health departments and other recognized chest clinics (“carve outs”).
4. NJDHSS should assist local health departments and/or chest clinic identify funds from voluntary and other non-profit organizations to enhance the implementation of patient-based services (i.e., incentives and enablers) and patient and community education.

Glossary of Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
ALANJ	American Lung Association of New Jersey
ATS	American Thoracic Society
BCG	Bacillus of Calmette-Guerin (Vaccine for TB)
CDC	Centers for Disease Control and Prevention
CTS	Counseling and Testing Sites
DOT	Directly Observed Therapy
DTC	Drug Treatment Center
EIP	Early Intervention Program (HIV)
HIV	Human Immunodeficiency Virus
IOM	Institute of Medicine
ICN	Infection Control Nurse
ICP	Infection Control Professional
INH	Isoniazid
LTBI	Latent TB Infection
NJDHSS	New Jersey Department of Health and Senior Services
OSHA	Occupational Safety and Health Administration
PEOSH	Public Employees Occupational Safety and Health
PPD	Purified Protein Derivative- (antigen for skin testing)
STD	Sexually Transmitted Disease

Pertinent References

1. Institute of Medicine, 2000. Ending Neglect, the Elimination of Tuberculosis in the United States, National Academy Press, Washington D.C.
2. American Thoracic Society, Centers for Disease Control and Prevention, 1994 Treatment of tuberculosis and tuberculosis infection in adults and children. *American Journal of Respiratory Critical Care Medicine*, 149.
3. Centers for Disease Control and Prevention, 1998. Prevention and treatment of tuberculosis among persons infected with human immunodeficiency virus: principles and therapy and revised recommendations. *MMWR* 44 (No.RR-20).
4. Centers for Disease Control and Prevention, 1995. Essential components of a tuberculosis prevention and control program: recommendations of the Advisory Council for the Elimination of Tuberculosis. *MMWR* 44; (No.RR-11) pps 1-16
5. Centers for Disease Control and Prevention, 1994. Guidelines for preventing the transmission of mycobacterium tuberculosis in health-care facilities. *MMWR* 43 (No.RR-13).
6. American Thoracic Society, Centers for Disease Control and Prevention, 1999. Targeted tuberculin testing and treatment of latent tuberculosis infection. *American Journal of Respiratory Critical Care Medicine*, 161, pp S221-S247, 2000.
7. American Thoracic Society, Centers for Disease Control and Prevention, 1999. Diagnostic Standards and Classification of tuberculosis in adults and children.. *American Journal of Respiratory Critical Care Medicine*, 161, pp 1376-1395, 2000.
8. Centers for Disease Control and Prevention, 2000. Core curriculum on tuberculosis: what every clinician should know, Fourth Edition, 2000.
9. Centers for Disease Control and Prevention, 2000. Notice to Readers: updated guidelines for the use of rifabutin or rifampin for the treatment and prevention of tuberculosis in HIV-infected persons taking protease inhibitors or nonnucleoside reverse transcriptase inhibitors. *MMWR* 49: 185-189
10. Centers for Disease Control and Prevention and National Tuberculosis Centers, 2000. Strategic Plan for Tuberculosis Training and Education, 2000.

- 11 Centers for Disease Control and Prevention, National Prevention Information Network, 2000. Tuberculosis Training and Education Guide, January 2000.
12. New Jersey Department of Health and Senior Services, 1999. Health New Jersey 2010, A Health Agenda for the First Decade of the New Millennium, October 1999.

WEB SITES

(All have specific items and linkages to other tuberculosis sites)

1. Centers for Disease Control and Prevention; National Center for HIV, STD, and TB Prevention; Division of Tuberculosis Elimination (DTBE),:
<http://www.cdc.gov/nchstp/tb>
2. New Jersey Department of Health and Senior Services; Public Health and Prevention Programs; Division of Epidemiology, Environmental and Occupational Health; Communicable Disease Service; Tuberculosis Program:
<http://www.state.nj.us/health/cd/tbhome.htm>
3. New Jersey Medical School, University of Medicine and Dentistry of New Jersey, National Tuberculosis Center: <http://www.umdnj.edu/ntbc>